

AN OVERVIEW OF PHARMACEUTICAL SELF NANO EMULSIFYING DRUG DELIVERY SYSTEMS

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ABSTRACT:

Self-emulsifying drug delivery systems (SNEDDS) are transforming the pharmaceutical industry, allowing drug delivery with greater accuracy and efficacy than ever before. SNEDDS are a type of drug delivery system that uses nanoparticles to self-emulsifying drugs. This means that the drugs are encapsulated within nanoparticles, which can then be taken up by cells and transported through the body. Read on to learn more about SNEDDS and how they could revolutionize the way we administer medication. Nano self-emulsifying drug delivery systems (SEDDES) offer many potential advantages over traditional drug delivery methods, but there are also some disadvantages to consider. One of the biggest disadvantages is the potential for nano SEDDES to increase the toxicity of drugs. These nanoparticles can interact with cells and cellular components in unexpected ways, potentially leading to increased toxicity.

Key words: *Self Emulsifying Drug Delivery Systems, SEDDES, Nano Self Emulsifying Drug Delivery Systems (SNEDDS).*

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INTRODUCTION:

Self-emulsifying nano drug delivery systems (SNEDDS) are transforming the pharmaceutical industry, allowing drug delivery with greater accuracy and efficacy than ever before [1]. This type of technology is becoming increasingly popular as pharmaceutical companies look for new and innovative ways to deliver drugs to patients [2]. In this article, we will discuss what SNEDDS are and how they can improve the overall efficiency of drug delivery. We will also explore their potential applications in the pharmaceutical world and cover some of the advantages and disadvantages that come with using them [3]. Read on to learn more about SNEDDS and how they could revolutionize the way we administer medication.

WHAT IS NANO SELF EMULSIFYING DRUG DELIVERY SYSTEMS?

As the name suggests, nano self-emulsifying drug delivery systems (nano-SEDDES) are a type of drug delivery system that uses nanoparticles to self-emulsify drugs [1]. This means that the drugs are encapsulated within nanoparticles, which can then be taken up by cells and transported through the body. Nano-SEDDES have many potential advantages over traditional drug delivery systems, including improved

bioavailability, increased stability, and reduced toxicity [4].

HOW DO THEY WORK?

The self-emulsifying drug delivery system (SEDDS) is a type of formulation used to administer poorly soluble drugs. In recent years, the use of nano sized SEDDS has gained popularity due to its ability to increase bioavailability and improve absorption [5].

Nano-sized SEDDS are typically made up of a combination of lipids and surfactants [3,5]. The lipids help to solubilize the drug while the surfactants act as emulsifiers, allowing for the formation of nano-sized droplets [6]. Once ingested, the droplets self-emulsify in the presence of water and are quickly absorbed into the bloodstream [7].

One advantage of using nano-sized SEDDS is that they can be designed to target specific areas of the body. For example, by modifying the lipid composition, nano-sized SEDDS can be formulated to target the liver or gut for improved absorption and bioavailability [6]. In addition, nano-sized SEDDS can also be used to deliver multiple drugs simultaneously. This is achieved by incorporating different types of drugs into each individual droplet [4,6]. When administered together, these drugs can interact synergistically to produce a desired effect .

ADVANTAGES OF NANO SELF EMULSIFYING DRUG DELIVERY SYSTEMS:

Nano self-emulsifying drug delivery systems (SEDDS) offer many advantages over traditional drug delivery systems [2]. They can improve the bioavailability of poorly soluble drugs, reduce the dose required, and minimize side effects [5]. Nano SEDDS are also more stable and easier to manufacture than traditional drug delivery systems.

DISADVANTAGES OF NANO SELF EMULSIFYING DRUG DELIVERY SYSTEMS:

Nano self-emulsifying drug delivery systems (SEDDS) offer many potential advantages over traditional drug delivery methods, but there are also some disadvantages to consider [4]. One of the biggest disadvantages is the potential for nano SEDDS to increase the toxicity of drugs [7]. This is because the nanoparticles used in these delivery systems can interact with cells and cellular components in unexpected ways, potentially leading to increased toxicity. Additionally, nano SEDDS are typically more expensive to produce than traditional drug delivery methods, so there is a financial barrier to consider as well. Finally, because nano SEDDS are a relatively new technology, there is still much unknown about their long-term safety and efficacy [3].

ARE NANO SELF EMULSIFYING DRUG DELIVERY SYSTEMS SAFE?

Yes, nano self-emulsifying drug delivery systems (SEDDS) are safe. In fact, they offer many advantages over traditional delivery methods, including improved bioavailability, more targeted delivery, and reduced side effects [2,4].

Nano SEDDS are particularly effective at delivering lipophilic (fat-soluble) drugs, which tend to be poorly absorbed when taken orally. By emulsifying the drug in a nanoscale particle, it can be more easily absorbed into the bloodstream. Nano SEDDS can also be used to target specific tissues or organs, making them ideal for treating conditions like cancer [5].

What's more, because nano SEDDS are less likely to cause side effects than other delivery methods, they have the potential to improve patient compliance with treatment regimens [6,7].

CONCLUSION:

Pharmaceutical nano self-emulsifying drug delivery systems offer numerous benefits to both patients and medical care providers. With their ability to effectively deliver drugs in a consistent, easy-to-administer way, they can help improve the efficacy of treatments while reducing the number of side effects associated with them. Pharmaceutical nano SEDDS provide an innovative solution for improving patient outcomes and should be further explored by those interested in advancing healthcare technology.

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